AMENDMENTS TO THE SPECIFICATION

The following is a marked up version of each replacement paragraph and/or section of the specification in which underlines indicates insertions and strikethrough indicates deletions.

Please replace paragraph [0003] on page 1 with the following paragraph:

[0003] The prior art can only determine if the Equipment Under Test (EUT) has met the EMC criterion. When the EUT fails the EMC test, the prior art can only report whether the EMI of the EUT is higher than EMC limitation under a specific frequency, rather than locating the EMI in the EUT. It is very difficult to find~~trace~~ out the source of EMI and remove it. To locate EMI in the EUT mainly depends on the experience of the design engineer and continuous trying. In addition, the standard EMC test can only be carried out in shielded chamber with expensive equipments and the above test-modification-test looping can cause massive increase in the cost and make the product R&D period unforeseeable.

Please replace paragraph [0004] on page 2 with the following paragraph:

[0004] The present invention provides an Electromagnetic Interference (EMI) measuring method and its system for diagnosing EMI of various electronic devices and instructing the user to improve the design to satisfy EMC criterion. The principle of the method is that one can measure directly in EUT layout a group of equably distributed test points or simulate the EUT using the

Electronic Design Assistant software (such as SPICE, PROTEL or other CAD software) to obtain a set of time-domain signal waveform data that can be in the form of the current, or the voltage, or the electromagnetic field intensity when the EMI is over limitation under a specialized frequency or evaluation under a specialized frequency is desired. Then, one can number the waveform data according to the test point locations and convert the time-domain signal into the frequency-domain signal. By comparing the amplitude~~value~~ of the EMI under the specialized frequency, waveform data bearing the maximum EMI can be ~~traced~~found out. As all the waveform data are numbered corresponding to the specialized test points, it is also easy to ~~trace out~~find the physical location of the test point bearing the maximum EMI~~ value~~. Meanwhile, one can ~~trace~~find the EMI location in the signal waveform by means of time/frequency analysis. Because the different parts in a signal waveform are generated by different components in the circuit, it is possible to deduce the components that generate the EMI in the different parts of the waveform. One can reduce EMI by modifying the layout where the EMI is located, or by replacing the components that generate EMI until the EUT finally accords with EMC criterion.

Please replace paragraph (1) in paragraph [0005] on page 3 with the following paragraph:

(1) The EMI diagnosis method comprising:

First, a group of time-domain waveforms are acquired by measuring a group of equably distributed test points that are well numbered. Second, processing, converting, comparing and

analysing the waveforms can ~~trace~~find out the test point bearing the maximum EMI under a specified frequency. The position where the test point located should be the location of the EMI source.

Please replace paragraph [0006] on page 3 with the following paragraph:

[0006] Compared with prior art, the present invention method and its system have prominent advantages. By means of finding~~tracing out~~ EMI physical position and finding~~tracing out~~ components that possibly generate EMI, the invention method and its system indicate a right approach for reducing EMI and shorten the product developing period. The computer based processing, converting, comparing and analysing system are flexible and independent from the ambience and working condition. It can also acquire EMI data for analysis under normal industry environment with general instruments. Compared with prior art that requires expensive frequency analyser and shield chamber, the present invention is a money-saving solution. The present invention is simple both in method and in system structure and easy to operate. The operation is independent from the environment and the diagnosis result is accurate.

Please replace paragraph [0008] on page 4 with the following paragraph:

[0008] Fig. 2 is a diagram to illustrate the different points in EUT layout with their EMI ~~values~~ amplitudes used to ~~trace~~find EMI location in EUT layout under a specific frequency.

Please replace paragraphs (3) and (4) in paragraph [0012] on page 5 with the following paragraphs:

(3) To find out the test point bearing the maximum interference value by comparing the amplitude~~value~~ of the EMI frequency components among test points according to above frequency analysis (Fig.2); or to ~~trace~~find out the EMI frequency locations in the time domain waveform according to the time/frequency domain analysis (Fig.3).

(4) To ~~trace~~find out the position of the test point bearing the maximum EMI ~~value~~ in the EUT layout. The position will be the potential location of the EMI source. Alternatively, to find out the spots in the waveform in the time domain that corresponds to the moments when the EMI occurs. The electronic components in the EUT that generate the spots in the waveform should be the components generating the EMI.

Please replace paragraph [0013] on page 6 with the following paragraph:

[0013] As described above, suppose the EMI is known to be over limitation under the frequency F. To obtain the EMI value with the frequency F, one can first use an oscilloscope or the Electronic Design software (CAD to simulate EUT) to obtain P1 – Pn point signal waveforms and record them. The recorded waveforms are transferred into the computer for processing. As shown in Fig. 2, after Fourier transforming or Wavelet transforming (using commercial software such as MATLAB mathematical software package or self designed software) we can obtain ~~the F~~

~~frequency EMI components F1 – Fn~~a group of F frequency EMI amplitudes F1-Fn corresponding to point P1 – Pn. Comparing the n EMI components F1 – Fn, the test point Pi that bears the maximum EMI ~~value~~ Fi can be found out and the Pi point should be the potential EMI source (in Fig.2, there are P1 – P19 test points and the Pi is P19). Because the Pi has been numbered according to its location in the EUT layout, it is easy to be mapped into physical location in the EUT layout. If the waveform is transformed from the time domain into the time/frequency domain by means of STFT or Wavelet Transform, as shown in Fig. 3, one can check out in which spot of the time domain waveform the frequency F (EMI) is generated according to the time distribution of frequency F, (in Fig.3, EMI occurs in the time 0.004, 0.010, 0.013 ~~4, 10, 13~~ … μs, corresponding to the spots of the time domain waveform where the amplitude of the waveform is not at its maximum value). In this way the spots of the time domain waveform that relate to EMI in time are well located and electronic components that generate the spots of the waveform should be the components that generate the EMI.

Please replace paragraph [0019] on page 7 with the following paragraph:

[0019] In the above construction, the time domain signal waveform acquired with the probe is recorded by the waveform record circuit (12) in the signal acquisition portion (1), and is delivered through the data input interface (21) of the signal analysis portion (2) into the memory (22) and the time/frequency converter and frequency component comparator (23), as shown in Fig. 5. The time domain signal waveform that reaches the time/frequency converter and

frequency component comparator (23) is input via the data input module (2301), and collected by the data acquirement module (2302), and moved into the signal transform module (2303) where it is transformed by Fourier Transform, or Wavelet transform, or STFT into the frequency signal or time/frequency message. Then the signal after transforming is processed by the frequency component comparison and analysis module (2304) where the frequency components are ranked and found~~traced out~~ the ones maximum amplitude~~value~~, or the time domain signal is compared with time/frequency message. The processing results are finally displayed with the display module (2305).